

FACT SHEET FOR NPDES PERMIT WA-004468-7

ROSALIA WASTEWATER TREATMENT PLANT

SUMMARY

The Town of Rosalia (population 660) owns and operates facultative lagoon system and chlorine disinfection with effluent discharge to Pine Creek. The lagoons are adjacent to and topographically up gradient to Pine Creek. The facility property is in the northwest part of town, adjacent to Pine Creek and is bordered by County Road 36, Pine Creek, and the railroad tracks. The plant is operated as an intermittent discharge facility with discharge allowed for a period from January through March.

The proposed permit sets “Alternative Discharge Standards” interim limits for the facultative lagoon system. The technology based Alternative Discharge Standards limits are used for facilities having a design capacity of less than two million gallons per day and using waste stabilization pond treatment process [WAC 173-221-050(2)]. After review of historical records of discharge quantity along with recalculating influent versus effluent balance numbers, Ecology has increased the allowable effluent discharge limit from 49,000 gallons per day to 128,000 gallons per day.

An Administrative Order will accompany the permit. The Order contains a compliance schedule agreed upon by Ecology and the town of Rosalia for inflow and infiltration reduction and for the facility upgrade. The final permit limits will take effect when the new plant is operational. The Order accompanying the permit requires the construction of the plant be substantially complete by December 31, 2003.

Rosalia has prepared and submitted an updated Wastewater Facility Plan to address excessive infiltration and inflow as well as to upgrade the treatment plant to meet water quality based effluent limit requirements. The town has received grant and loan monies to implement the reduction of excessive inflows and to prepare a facility plan to upgrade the facility.

TABLE OF CONTENTS

INTRODUCTION	1
BACKGROUND INFORMATION	1
DESCRIPTION OF THE FACILITY	1
History.....	1
Collection System Status	1
Treatment Processes.....	1
Discharge Outfall	1
Residual Solids.....	1
PERMIT STATUS.....	1
SUMMARY OF COMPLIANCE WITH THE PREVIOUS PERMIT	1
WASTEWATER CHARACTERIZATION	1
SEPA COMPLIANCE.....	1
PROPOSED PERMIT LIMITATIONS.....	1
DESIGN CRITERIA	1
TECHNOLOGY-BASED EFFLUENT LIMITATIONS	1
SURFACE WATER QUALITY-BASED EFFLUENT LIMITATIONS	1
Numerical Criteria for the Protection of Aquatic Life.....	1
Numerical Criteria for the Protection of Human Health.....	1
Narrative Criteria	1
Antidegradation.....	1
Critical Conditions	1
Mixing Zones	1
Description of the Receiving Water.....	1
Surface Water Quality Criteria	1
Human Health	1
GROUND WATER QUALITY LIMITATIONS.....	1
COMPARISON OF EFFLUENT LIMITS WITH THE EXISTING PERMIT	
ISSUED IN 1996.	1
MONITORING REQUIREMENTS	1
LAB ACCREDITATION	1
OTHER PERMIT CONDITIONS	1
SUBMITTAL OF COMPREHENSIVE FACILITIES PLAN.....	1
REPORTING AND RECORDKEEPING	1
PREVENTION OF FACILITY OVERLOADING	1
OPERATION AND MAINTENANCE (O&M).....	1
RESIDUAL SOLIDS HANDLING.....	1
PRETREATMENT	1
Wastewater Permit Required	1
Requirements for Routine Identification and Reporting of Industrial Users	1
Duty to Enforce Discharge Prohibitions	1
GENERAL CONDITIONS	1

FACT SHEET FOR NPDES PERMIT WA-004468-7
ROSALIA WASTEWATER TREATMENT PLANT

PERMIT ISSUANCE PROCEDURES	1
PERMIT MODIFICATIONS	1
RECOMMENDATION FOR PERMIT ISSUANCE	1
REFERENCES FOR TEXT AND APPENDICES.....	1
APPENDIX A--PUBLIC INVOLVEMENT INFORMATION.....	1
APPENDIX B--GLOSSARY	1
APPENDIX C--TECHNICAL CALCULATIONS	1

INTRODUCTION

The Federal Clean Water Act (FCWA, 1972, and later modifications, 1977, 1981, and 1987) established water quality goals for the navigable (surface) waters of the United States. One of the mechanisms for achieving the goals of the Clean Water Act is the National Pollutant Discharge Elimination System of permits (NPDES permits), which is administered by the Environmental Protection Agency (EPA). The EPA has delegated responsibility to administer the NPDES permit program to the State of Washington on the basis of Chapter 90.48 RCW which defines the Department of Ecology's authority and obligations in administering the wastewater discharge permit program.

The regulations adopted by the State include procedures for issuing permits (Chapter 173-220 WAC), technical criteria for discharges from municipal wastewater treatment facilities (Chapter 173-221 WAC), water quality criteria for surface and ground waters (Chapters 173-201A and 200 WAC), and sediment management standards (Chapter 173-204 WAC). These regulations require that a permit be issued before discharge of wastewater to waters of the state is allowed. The regulations also establish the basis for effluent limitations and other requirements which are to be included in the permit. One of the requirements (WAC 173-220-060) for issuing a permit under the NPDES permit program is the preparation of a draft permit and an accompanying fact sheet. Public notice of the availability of the draft permit is required at least thirty days before the permit is issued (WAC 173-220-050). The fact sheet and draft permit are available for review (see Appendix A--Public Involvement of the fact sheet for more detail on the Public Notice procedures).

The fact sheet and draft permit have been reviewed by the Permittee. Errors and omissions identified in this review have been corrected before going to public notice. After the public comment period has closed, the Department will summarize the substantive comments and the response to each comment. The summary and response to comments will become part of the file on the permit and parties submitting comments will receive a copy of the Department's response. The fact sheet will not be revised. Comments and the resultant changes to the permit will be summarized in Appendix D--Response to Comments.

GENERAL INFORMATION	
Applicant	Town of Rosalia
Facility Name and Address	Town of Rosalia Wastewater Treatment Plant W. 110 Fifth Street, P.O. Box 277 Rosalia, WA 99170
Type of Treatment:	2 Cell Facultative Lagoons, followed by Chlorination and Discharge to Pine Creek
Discharge Location	Pine Creek Latitude: 47° 14' 31" N Longitude: 117° 22' 20" W.
Water Body ID	WA-34-1017

Number	
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BACKGROUND INFORMATION

DESCRIPTION OF THE FACILITY

The Town of Rosalia is located on the northern part of Whitman County about 30 miles south of Spokane and 35 miles northwest of Pullman. The city is located in a shallow valley created by Pine Creek whose waters eventually discharge into the Palouse River system

Rosalia's climate, due to its protected valley location, is somewhat more moderate than that of the surrounding area. Temperatures normally vary from a winter minimum of about 0° F to a summer maximum of about 95° F. Rainfall averages about 18-19" per year. Severe storms are infrequent.

The current population of Rosalia is about 660 of which about 614 persons are connected to the sewer system, and has been relatively stable for the last 40 years.

HISTORY

The major portion of the city's sewerage system was constructed between 65-70 years ago. Some substantial additions were made in 1949 and an occasional minor extension is made from time to time. Until 1962, the collection system discharged to a large septic tank, located at the current wastewater treatment plant site and this discharged into Pine Creek. The 1961 engineering report, titled Engineering Report on Sewage Treatment Facilities, Rosalia, Washington, June, 1961, stated "Discharge of the raw effluent into this small stream has resulted in extensive pollution with the resultant odors, disfigurement of the stream and health hazards." In 1962, the lift station and the 2 cell facultative lagoon system were constructed.

Currently, the town is completing an engineering evaluation of the treatment system which will be compiled in a Wastewater Facilities and General Sewer Plan. It is likely that substantial changes will be made to the system over the next few years.

COLLECTION SYSTEM STATUS

The existing wastewater collection system consists of 4, 6, 8, 10, 12 and 15 inch sanitary sewers. No information is available as to the date of construction, but it is believed that the major portion of the system is over 50 years old. Minor extensions have been made from time to time since then.

TREATMENT PROCESSES

The facility at the treatment plant site collects the wastewater from the city and lifts the flow to a diversion box, from which it can be discharged into either of 2 facultative lagoons. According to the 1961 Engineering Report site layout drawings, the first lagoon is about 2.1 acres in size and the second lagoon is 2.9 acres in size. However, the text of the 1961 Engineering Report gives a

FACT SHEET FOR NPDES PERMIT WA-004468-7
ROSALIA WASTEWATER TREATMENT PLANT

total “lagoon water-surface-area” of 3.13 acres. The preliminary Wastewater Facilities and General Sewer Plan, September, 2000, by Varela & Associates listed the lagoons at 1.9 and 2.75 acres respectively at a water surface elevation with about 2 feet of freeboard. After treatment, the effluent flows into the old septic tank which has been modified into a chlorine contact basin. There is also a gas chlorination system. The stated discharge removal rates for this system were “in excess of 80%” BOD removal and 98% bacterial reduction.

Design criteria listed in or calculated from the approved 1961 Thompson & Westin Engineering Report were:

Annual Average Inflow:	81,900 gpd
(based on 90 gallons/person plus infiltration)	
Maximum daily flow:	598,000 gpd
(based on 750 population design plus infiltration)	
Influent BOD loading:	127 lbs/day
(0.17 lbs/capita/day x 750)	
Design population:	750
Lagoon #1	2.1 acres
Lagoon #2	2.9 acres

The 1996 Fact Sheet had shown the “Annual Average Inflow” to be 125,100 gpd, which had been calculated using the maximum design population of 750, 90 gallons per person domestic use, and a maximum infiltration rate of 40 gpm. The calculations were not included in the 1961 Engineering Report nor were they in the 1996 Fact Sheet. The calculation for the 1996 Fact Sheet Annual Average Inflow number is as follows:

- $[750(90\text{gal/percapita/day})] + [40\text{gpm}(60\text{min/hr})(24\text{hr/day})] =$
- $[67,500\text{gpd}] + [57,600\text{gpd}] =$
- 125,100 gpd

The current “Annual Average Inflow” number is based on an “average” rather than a “maximum” infiltration rate. This calculation, based on numbers from the 1961 Engineering Report, is as follows:

- $[750(90\text{gal/percapita/day})] + [10\text{gpm}(60\text{min/hr})(24\text{hr/day})] =$
- $[67,500\text{gpd}] + [14,400\text{gpd}] =$
- 81,900 gpd

Maximum daily flow is based on a maximum 15-minute discharge of a per capita loading of 375 gpm plus 40 gpm infiltration or 415 gpm, which equals 598,000 gpd.

The preliminary Wastewater Facilities and General Sewer Plan, by Varela & Associates, dated September, 2000, calculated the average day flow to be 97,000 gpd. The Varela Report stated that the infiltration and inflow for the system averages 47,000 gpd.

*FACT SHEET FOR NPDES PERMIT WA-004468-7
ROSALIA WASTEWATER TREATMENT PLANT*

The final facility plan which will be completed and submitted for Ecology approval in 2003 will address the limitations of the existing plant, the impact of the discharge on Pine Creek and recommend upgrade of the plant to meet current discharge requirements.

DISCHARGE OUTFALL

Secondary treated and disinfected effluent is discharged from the facility via a 14" effluent pipeline from the septic tank/chlorine contact tank into Pine Creek which is a tributary of the Palouse River. The discharge point is on the bank of the creek, just above the surface of the water.

RESIDUAL SOLIDS

Any solids removed during the treatment of the wastewater in the lift station, the diversion box, the lagoons or in the chlorine contact chamber, in addition to incidental solids (rags, scum, and other debris) removed as part of the routine maintenance of the collection system or equipment that do not meet the minimal requirements for land application will be drained and disposed of in a manner acceptable to the Whitman County Health Department.

Any biosolids removed from the lagoons will be handled and disposed of in a manner that complies with the requirements of the Washington State Department of Ecology Biosolids Permit (WAC 173-308).

PERMIT STATUS

The previous permit for this facility was issued on June 24, 1996. The previous permit placed effluent limitations on 5-day Biochemical Oxygen Demand (BOD₅), Total Suspended Solids (TSS), pH, Fecal Coliform bacteria, Total Residual Chlorine and Effluent Flow.

An application for permit renewal was submitted to the Department on March 14, 2000 and accepted by the Department on March 28, 2000. Using the results of a review of the 1961 Engineering Report, and of the preliminary Wastewater Facilities and General Sewer Plan - Technical Memorandum, TMV Rosalia-05 information about Pine Creek, and the current discharge operations, the limits for effluent discharge will be raised from 49,000 gpd to 128,000 gpd. There is a more detailed explanation for the effluent discharge limit change in the "Wastewater Characterization" section.

The 1961 Engineering Report calculated influent and "overflow" or effluent numbers for the design criteria.

Using the results of the Wastewater Facilities and General Sewer Plan, TMVA-Rosalia-05, the final effluent maximum daily average ammonia limit of 7.0 mg/l and monthly average limit of 3.5 mg/l will be imposed. The 1996 permit limited the discharge to 49,000 gallons per day.

SUMMARY OF COMPLIANCE WITH THE PREVIOUS PERMIT

The facility received its last inspection on October 30, 1996.

FACT SHEET FOR NPDES PERMIT WA-004468-7
ROSALIA WASTEWATER TREATMENT PLANT

During the history of the previous permit, the Permittee has not remained in compliance, based on Discharge Monitoring Reports (DMRs) submitted to the Department and inspections conducted by the Department. The discharge events have been as high as 200,000 gallons per day during the months between January to March and the total residual chlorine concentrations exceed the allowed 0.5 mg/l monthly average. These exceedences reflect some of the obsolescence issues with the existing plant.

WASTEWATER CHARACTERIZATION

The concentration of pollutants in the discharge was reported in the NPDES application and in discharge monitoring reports. The effluent, which is only discharged from January to March of each year, is characterized as follows:

Table 1: Wastewater Characterization

<u>Parameter</u>	<u>Measure</u>
Effluent flow (mgd)	0.127 mgd – based on maximum Daily Flows
BOD (mg/l)	22.8 mg/L – average daily 66.0 mg/L – maximum daily
Total Suspended Solids (mg/l)	30.0 mg/L - average daily 115 mg/L - maximum daily
Fecal Coliform (#/100 ML)	10.0/100 ML – average daily 26.0/100 ML – maximum daily
Ammonia Nitrogen	6.0 mg/L – average daily 11.00 mg/L – maximum daily
pH (s.u.)	7.0 – 8.6
Total Residual Chlorine (mg/l)	0.62 mg/L – average daily 7.90 mg/L – maximum daily

The effluent ammonia concentrations may represent toxic pollutants to the receiving stream. The receiving water study indicates that current ammonia concentrations are adequate for 1996 permit discharge volume limits. However, the city currently discharges far in excess of the 49,000 gpd 1996 permit limit volumes as determined from the following:

- Varela & Associates reported an average effluent flow of about 130,000 gpd for the period of December, 1996 to March, 1999.
- The DMR records from January, 1998 to November, 2001 show the effluent flow to be an average of about 108,000 gpd. The Maximum Daily Flows for the same period from January, 1998 to November, 2001 averaged about 126,700 gpd.

Lower ammonia concentrations are required for higher discharge volumes.

Discharge Monitoring Reports show that historically the total residual chlorine concentrations have been exceeding the limits of the permit.

*FACT SHEET FOR NPDES PERMIT WA-004468-7
ROSALIA WASTEWATER TREATMENT PLANT*

SEPA COMPLIANCE

Any modifications of the sewage treatment plant will require compliance with the State Environmental Policy Act (SEPA).

PROPOSED PERMIT LIMITATIONS

Federal and State regulations require that effluent limitations set forth in a NPDES permit must be either technology- or water quality-based. Technology-based limitations for municipal discharges are set by regulation (40 CFR 133, and Chapters 173-220 and 173-221 WAC). Water quality-based limitations are based upon compliance with the Surface Water Quality Standards (Chapter 173-201A WAC), Ground Water Standards (Chapter 173-200 WAC), Sediment Quality Standards (Chapter 173-204 WAC) or the National Toxics Rule (Federal Register, Volume 57, No. 246, Tuesday, December 22, 1992.) The most stringent of these types of limits must be chosen for each of the parameters of concern. Each of these types of limits is described in more detail below.

The limits in this permit are based in part on information received in the application. The effluent constituents in the application were evaluated on a technology- and water quality-basis. The limits necessary to meet the rules and regulations of the State of Washington were determined and included in this permit. Ecology does not develop effluent limits for all pollutants that may be reported on the application as present in the effluent. Some pollutants are not treatable at the concentrations reported, are not controllable at the source, are not listed in regulation, and do not have a reasonable potential to cause a water quality violation. Effluent limits are not always developed for pollutants that may be in the discharge but not reported as present in the application. In those circumstances the permit does not authorize discharge of the non-reported pollutants. Effluent discharge conditions may change from the conditions reported in the permit application. If significant changes occur in any constituent, as described in 40 CFR 122.42(a), the Permittee is required to notify the Department of Ecology. The Permittee may be in violation of the permit until the permit is modified to reflect additional discharge of pollutants.

DESIGN CRITERIA

In accordance with WAC 173-220-150 (1)(g), flows or waste loadings shall not exceed approved design criteria.

The design criteria have been calculated using population numbers, average unit loading, and estimated average and maximum infiltration numbers from the 1961 Engineering Report on Sewage Treatment Facilities, Rosalia, Washington, prepared by Thompson & Weston, Consulting Engineers, and are as follows:

Table 2: Design Standards for Rosalia WWTP.

Parameter	Design Quantity
Monthly average influent flow ⁽¹⁾	81,900 gpd
Instantaneous peak inflow ⁽²⁾	598,000 gpd
BOD ₅ influent loading	127 lb./day
TSS influent loading	127 lb./day

*FACT SHEET FOR NPDES PERMIT WA-004468-7
ROSALIA WASTEWATER TREATMENT PLANT*

Design population equivalent 750

- (1) The monthly average inflow was calculated using the design population of 750, a 90 gallon/capita/day wastewater and an average infiltration rate of 10 gpm. This would be:

$$\begin{aligned}\text{Average Inflow} &= (750 \times 90) + (10 \text{ gpm})(60 \text{ min/hr})(24 \text{ hr/day}) \\ &= 67,500 \text{ gpd} + 14,400 \text{ gpd} \\ &= 81,900 \text{ gpd}\end{aligned}$$

Assuming a maximum infiltration of 40 gpm, the inflow would be calculated to be:

$$\begin{aligned}\text{Average Inflow}_{(\text{max})} &= 67,500 \text{ gpd} + (4) (14,400) \text{ gpd} \\ &= 125,100 \text{ gpd}\end{aligned}$$

- (2) Instantaneous peak flow was calculated using the design population of 750, the 90 gallons/capita/day, peak factor of 8, and the estimated maximum infiltration of 40 gpm:

$$\begin{aligned}\text{Instant peak flow} &= [(8 \times 750 \times 90) / (24 \times 60)] + 40 \text{ gpm} \\ &= 375 \text{ gpm} + 40 \text{ gpm} \\ &= 415 \text{ gpm} \\ &= 597,600 \text{ gpd}\end{aligned}$$

TECHNOLOGY-BASED EFFLUENT LIMITATIONS

Municipal wastewater treatment plants are a category of discharger for which technology-based effluent limits have been promulgated by federal and state regulations. These effluent limitations are given in the Code of Federal Regulations (CFR) 40 CFR Part 133 (federal) and in Chapter 173-221 WAC (state). These regulations are performance standards that constitute all known available and reasonable methods of prevention, control, and treatment for municipal wastewater.

Since the Rosalia facility has a design capacity of less than two million gallons per day and treatment takes place in facultative lagoons, Ecology will set interim technology based limits based on the Alternative Discharge Standards as listed in WAC 173-221-050(2). Given the type of facility and the history of treatment performance recorded in the Discharge Monitoring Reports (DMR), Ecology is establishing these interim limits until the new plant is operational. The following interim technology-based limits for pH, fecal coliform, BOD₅, and TSS are taken from Chapter 173-221 WAC:

Table 3: Technology-based Limits.

Parameter	Limit
pH:	shall be within the range of 6 to 9 standard units.
Fecal Coliform Bacteria	Monthly Geometric Mean = 200 organisms/100 mL Weekly Geometric Mean = 400 organisms/100 mL

Parameter	Limit
BOD ₅ (concentration)	Average Monthly Limit is the most stringent of the following: - 45 mg/L - may not exceed thirty-five percent (35%) of the average influent concentration Average Weekly Limit = 65 mg/L
TSS (concentration)	Average Monthly Limit is the most stringent of the following: - 45 mg/L - may not exceed thirty-five percent (35%) of the average influent concentration Average Weekly Limit = 65 mg/L
Chlorine	Average Monthly Limit = 0.5 mg/L Average Weekly Limit = 0.75 mg/L

The technology-based monthly average limitation for chlorine is derived from standard operating practices. The Water Pollution Control Federation's Chlorination of Wastewater (1976) states that a properly designed and maintained wastewater treatment plant can achieve adequate disinfection if a 0.5 mg/liter chlorine residual is maintained after fifteen minutes of contact time. See also Metcalf and Eddy, Wastewater Engineering, Treatment, Disposal and Reuse, Third Edition, 1991. A treatment plant that provides adequate chlorination contact time can meet the 0.5 mg/liter chlorine limit on a monthly average basis. According to WAC 173-221-030(11)(b), the corresponding weekly average is 0.75 mg/liter.

The existing permit has a chlorine limit of 0.5 mg/L monthly average and 0.75 mg/L weekly average and the facility historically has been unable to comply with it. The proposed permit includes the same limit.

The following technology-based mass limits are based on WAC 173-220-130(3)(b) and 173-221-050(2)(a).

Monthly effluent mass loadings (lbs/day) were calculated as the maximum monthly influent design loading (127 lbs./day) x 0.35 = 44.5 lbs./day.

The weekly average effluent mass loading is calculated as 1.5 x monthly loading = 66.7 lbs/day.

SURFACE WATER QUALITY-BASED EFFLUENT LIMITATIONS

In order to protect existing water quality and preserve the designated beneficial uses of Washington's surface waters, WAC 173-201A-060 states that waste discharge permits shall be conditioned such that the discharge will meet established Surface Water Quality Standards. The Washington State Surface Water Quality Standards (Chapter 173-201A WAC) is a state regulation designed to protect the beneficial uses of the surface waters of the state. Water quality-based effluent limitations may be based on an individual waste load allocation (WLA) or on a WLA developed during a basin-wide total maximum daily loading study (TMDL).

FACT SHEET FOR NPDES PERMIT WA-004468-7
ROSALIA WASTEWATER TREATMENT PLANT

NUMERICAL CRITERIA FOR THE PROTECTION OF AQUATIC LIFE

"Numerical" water quality criteria are numerical values set forth in the State of Washington's Water Quality Standards for Surface Waters (Chapter 173-201A WAC). They specify the levels of pollutants allowed in the receiving water while remaining protective of aquatic life. Numerical criteria set forth in the Water Quality Standards are used along with chemical and physical data for the wastewater and receiving water to derive the effluent limits in the discharge permit. When surface water quality-based limits are more stringent or potentially more stringent than technology-based limitations, they must be used in a permit.

NUMERICAL CRITERIA FOR THE PROTECTION OF HUMAN HEALTH

The state was issued 91 numeric water quality criteria for the protection of human health by the U.S. EPA (EPA 1992). These criteria are designed to protect humans from cancer and other disease and are primarily applicable to fish and shellfish consumption and drinking water from surface waters.

NARRATIVE CRITERIA

In addition to numerical criteria, "narrative" water quality criteria (WAC 173-201A-030) limit toxic, radioactive, or deleterious material concentrations below those which have the potential to adversely affect characteristic water uses, cause acute or chronic toxicity to biota, impair aesthetic values, or adversely affect human health. Narrative criteria protect the specific beneficial uses of all fresh (WAC 173-201A-130) and marine (WAC 173-201A-140) waters in the State of Washington.

ANTIDegradation

The State of Washington's Antidegradation Policy requires that discharges into a receiving water shall not further degrade the existing water quality of the water body. In cases where the natural conditions of the receiving water are of lower quality than the criteria assigned, the natural conditions shall constitute the water quality criteria. Similarly, when the natural conditions of a receiving water are of higher quality than the criteria assigned, the natural conditions shall constitute the water quality criteria. More information on the State Antidegradation Policy can be obtained by referring to WAC 173-201A-070.

The Department has reviewed existing records and is unable to determine if ambient water quality is either higher or lower than the designated classification criteria given in Chapter 173-201A WAC; therefore, the Department will use the designated classification criteria for this water body in the proposed permit. The discharges authorized by this proposed permit should not cause a loss of beneficial uses.

CRITICAL CONDITIONS

Surface water quality-based limits are derived for the water body's critical condition, which represents the receiving water and waste discharge condition with the highest potential for adverse impact on the aquatic biota, human health, and existing or characteristic water body uses.

*FACT SHEET FOR NPDES PERMIT WA-004468-7
ROSALIA WASTEWATER TREATMENT PLANT*

MIXING ZONES

The Water Quality Standards allow the Department of Ecology to authorize mixing zones around a point of discharge in establishing surface water quality-based effluent limits. Both "acute" and "chronic" mixing zones may be authorized for pollutants that can have a toxic effect on the aquatic environment near the point of discharge. The concentration of pollutants at the boundary of these mixing zones may not exceed the numerical criteria for that type of zone. Mixing zones can only be authorized for discharges that are receiving all known, available, and reasonable methods of prevention, control and treatment (AKART) and in accordance with other mixing zone requirements of WAC 173-201A-100.

The National Toxics Rule (EPA, 1992) allows the chronic mixing zone to be used to meet human health criteria.

DESCRIPTION OF THE RECEIVING WATER

The facility discharges to Pine Creek. Pine Creek empties into Rock Creek about 22 miles downstream from Rosalia, which then empties into Rock Lake after a short distance. Rock Creek eventually drains into the Palouse River.

Because Pine Creek is a feeder stream for Rock Lake, it is a Class AA stream by the definition listed under WAC 173-201A-120(2).

Characteristic uses for a Class AA stream listed in WAC 173-201-030(1)(a) include the following:

water supply (domestic, industrial, agricultural); stock watering; fish migration; fish rearing, spawning and harvesting; wildlife habitat; primary contact recreation; sport fishing; boating and aesthetic enjoyment; commerce and navigation.

The historical uses and present-day stream environment for Pine Creek do not fit the characteristic uses of a Class AA stream.

Water quality of this class shall meet or exceed the requirements for most uses.

Pine Creek is 303d listed at Pine City, which is about 15 miles downstream, for pH, temperature, and dissolved oxygen. The TMDL study for Pine Creek is scheduled for 2006.

SURFACE WATER QUALITY CRITERIA

Applicable criteria are defined in Chapter 173-201A WAC for aquatic biota. In addition, U.S. EPA has promulgated human health criteria for toxic pollutants (EPA 1992). Criteria for this discharge are summarized below:

Fecal Coliform	50 organisms/100 mL maximum geometric mean
Dissolved Oxygen	9.5 mg/L minimum
Temperature	16 degrees Celsius maximum or incremental increases

*FACT SHEET FOR NPDES PERMIT WA-004468-7
ROSALIA WASTEWATER TREATMENT PLANT*

	above background
pH	6.5 to 8.5 standard units
Turbidity	less than 5 NTUs above background
Chlorine	11.0 µg/L (chronic), 19.0 µg/L (acute)
Ammonia	Formulated in 173-201A-040

Toxic Pollutants--Federal regulations (40 CFR 122.44) require NPDES permits to contain effluent limits for toxic chemicals in an effluent whenever there is a reasonable potential for those chemicals to exceed the surface water quality criteria. This process occurs concurrently with the derivation of technology-based effluent limits. Facilities with technology-based effluent limits defined in regulation are not exempted from meeting the Water Quality Standards for Surface Waters or from having surface water quality-based effluent limits.

The following toxics were determined to be present in the discharge: chlorine and ammonia.

The draft Wastewater Facilities and General Sewer Plan, Technical Memorandum TMVA-Rosalia-05, Varela & Associates, calculated the maximum effluent ammonia limits for Lagoon Treatment limited to one discharge period per year during January to March to be 7.1 mg/L (maximum daily) and 3.5 mg/L (maximum monthly average). For the periods of high flows in Pine creek the maximum monthly average chlorine residual was calculated to be 0.02 mg/L. The Facility Plan states that this limit could only be achieved with de-chlorination, which is not part of the existing facility process.

The resultant effluent limits are as follows:

Pollutant	Maximum Monthly Average	Maximum Daily Average
Ammonia	3.5 mg/L	7.1 mg/L
Chlorine	0.5 mg/L	0.75 mg/L

HUMAN HEALTH

Washington's water quality standards now include 91 numeric health-based criteria that must be considered in NPDES permits. These criteria were promulgated for the state by the U.S. EPA in its National Toxics Rule (Federal Register, Volume 57, No. 246, Tuesday, December 22, 1992).

The Department has determined that the applicant's discharge is unlikely to contain chemicals regulated for human health. The discharge will be re-evaluated for impacts to human health at the next permit issuance.

*FACT SHEET FOR NPDES PERMIT WA-004468-7
ROSALIA WASTEWATER TREATMENT PLANT*

GROUND WATER QUALITY LIMITATIONS

The Department has promulgated Ground Water Quality Standards (Chapter 173-200 WAC) to protect uses of ground water. Permits issued by the Department shall be conditioned in such a manner so as not to allow violations of those standards (WAC 173-200-100).

Any seepage from the lagoons must be protective of the groundwater.

COMPARISON OF EFFLUENT LIMITS WITH THE EXISTING PERMIT ISSUED IN 1996.

Interim limits for the existing treatment plant are technology based and will be in effect until the new plant is operational. The facility discharges in the winter from January through March, in order to: discharge into Pine Creek during high flows, reduce the volume of wastewater in the lagoons, protect the lagoons from failure, and prevent a potential over-topping of the lagoon dikes. The final discharge limits are water quality based and will become effective with the completion of the new plant.

Based on review of the effluent flow from past Discharge Monitoring Reports, and assuming that the current January through March discharge will be the normal operations, the allowable effluent discharge limit will be increased to 128,000 gallons per day with an allowable effluent ammonia concentration limit of 7.0 mg/l (maximum daily average) and 3.5 mg/l (maximum monthly average).

Parameter	Existing Monthly Limits	Proposed Interim Monthly Limits	Proposed Final Monthly Limits
Biochemical Oxygen Demand	30 mg/L, 12.3 lbs/day	45 mg/L, 66.7 lbs/day	30 mg/L, 19.1 lbs/day
Total Suspended Solids	30 mg/L, 12.3 lbs/day	45 mg/L, 66.7 lbs/day	30 mg/L, 19.1 lbs/day
Fecal Coliform Bacteria	200/100 mL	200/100 mL	50/100 mL
pH	Within 6.0 to 9.0 range	Within 6.5 to 8.5 range	Within 6.5 to 8.5 range
Chlorine	0.5 mg/L	0.5 mg/L	19 µg/L
Effluent Flow	49,000 gpd	128,000 gpd	128,000 gpd
Ammonia	-----	-----	3.5 mg/L

MONITORING REQUIREMENTS

Monitoring, recording, and reporting are required (WAC 173-220-210 and 40 CFR 122.41) to verify that the treatment process is functioning correctly and the effluent limitations are being achieved.

Monitoring of sludge quantity and quality is necessary to determine the appropriate uses of the sludge. Sludge monitoring is required by the current state biosolids program under WAC 173-308 and also by EPA under 40 CFR 503.

The monitoring schedule is detailed in the proposed permit under Condition S.2. Specified monitoring frequencies take into account the quantity and variability of discharge, the treatment method, past compliance, significance of pollutants, and cost of monitoring. The required monitoring frequency is consistent with agency guidance given in the current version of Ecology's *Permit Writer's Manual* for this type of system.

Additional monitoring is required in order to further characterize the effluent. These monitored pollutants could have a significant impact on the quality of the surface water.

LAB ACCREDITATION

With the exception of certain parameters the permit requires all monitoring data to be prepared by a laboratory registered or accredited under the provisions of Chapter 173-50 WAC, *Accreditation of Environmental Laboratories*.

OTHER PERMIT CONDITIONS

SUBMITTAL OF COMPREHENSIVE FACILITIES PLAN.

The comprehensive wastewater facilities and general sewer plan report has been completed and submitted to Ecology for review and approval. Final approval was obtained on November 22, 2002.

REPORTING AND RECORDKEEPING

The conditions of S3. are based on the authority to specify any appropriate reporting and recordkeeping requirements to prevent and control waste discharges (WAC 173-220-210).

PREVENTION OF FACILITY OVERLOADING

Overloading of the treatment plant is a violation of the terms and conditions of the permit. To prevent this from occurring, RCW 90.48.110 and WAC 173-220-150 require the Permittee to take the actions detailed in proposed permit requirement S.4. to plan expansions or modifications before existing capacity is reached and to report and correct conditions that could result in new or increased discharges of pollutants. Condition S.4. restricts the amount of flow.

*FACT SHEET FOR NPDES PERMIT WA-004468-7
ROSALIA WASTEWATER TREATMENT PLANT*

OPERATION AND MAINTENANCE (O&M)

The proposed permit contains condition S.5. as authorized under RCW 90.48.110, WAC 173-220-150, Chapter 173-230 WAC, and WAC 173-240-080. It is included to ensure proper operation and regular maintenance of equipment, and to ensure that adequate safeguards are taken so that constructed facilities are used to their optimum potential in terms of pollutant capture and treatment.

RESIDUAL SOLIDS HANDLING

To prevent water quality problems the Permittee is required in permit condition S7. to store and handle all residual solids (grit, screenings, scum, sludge, and other solid waste) in accordance with the requirements of RCW 90.48.080 and State Water Quality Standards.

The final use and disposal of sewage sludge or biosolids from this facility is regulated by Chapter 70.95J RCW and WAC 173-308 as well as by U.S. EPA under 40 CFR 503. The disposal of other solid waste is under the jurisdiction of the Whitman County Health Department.

PRETREATMENT

An industrial user survey may be required to determine the extent of compliance of all industrial users of the sanitary sewer and wastewater treatment facility with federal pretreatment regulations (40 CFR Part 403 and Sections 307(b) and 308 of the Clean Water Act), with state regulations (Chapter 90.48 RCW and Chapter 173-216 WAC), and with local ordinances.

The Department may modify this permit to incorporate additional requirements relating to the establishment and enforcement of local limits for pollutants of concern. Any permit modification is subject to formal due process procedures pursuant to state and federal law and regulation.

WASTEWATER PERMIT REQUIRED

RCW 90.48 and WAC 173-216-040 require SIUs to obtain a permit prior to discharge of industrial waste to the Permittee's sewerage system. This provision prohibits the POTW from accepting industrial wastewater from any such dischargers without authorization from the Department.

REQUIREMENTS FOR ROUTINE IDENTIFICATION AND REPORTING OF INDUSTRIAL USERS

The NPDES permit requires non-delegated POTWs to "take continuous, routine measures to identify all existing, new, and proposed SIUs and potential significant industrial users (PSIUs) discharging to the Permittee's sewerage system". Examples of such routine measures include regular review of business tax licenses for existing businesses and review of water billing records and existing connection authorization records. System maintenance personnel can also be diligent during performance of their jobs in identifying and reporting as-yet unidentified industrial dischargers. Local newspapers, telephone directories, and word-of-mouth can also be important sources of information regarding new or existing discharges. The POTW is required to notify an industrial discharger, in writing, of their responsibilities regarding application for a

*FACT SHEET FOR NPDES PERMIT WA-004468-7
ROSALIA WASTEWATER TREATMENT PLANT*

State waste discharge permit and to send a copy of the written notification to the Department. The Department will then take steps to solicit a State waste discharge permit application.

DUTY TO ENFORCE DISCHARGE PROHIBITIONS

This provision prohibits the POTW from authorizing or permitting an industrial discharger to discharge certain types of waste into the sanitary sewer. The first portion of the provision prohibits acceptance of pollutants which cause pass through or interference. The definitions of pass through and interference are in Appendix B of the fact sheet..

The second portion of this provision prohibits the POTW from accepting certain specific types of wastes, namely those which are explosive, flammable, excessively acidic, basic, otherwise corrosive, or obstructive to the system. In addition wastes with excessive BOD, petroleum based oils, or which result in toxic gases, are prohibited to be discharged. The regulatory basis for these prohibitions is 40 CFR Part 403, with the exception of the pH provisions which are based on WAC 173-216-060.

The third portion of this provision prohibits certain types of discharges unless the POTW receives prior authorization from the Department. The discharges include cooling water in significant volumes, storm water and other direct inflow sources, and wastewaters significantly affecting system hydraulic loading, which do not require treatment.

ACCOMPANYING ORDER

An Order containing a compliance schedule shall accompany the new permit. The compliance schedule as part of an Order was necessary because of the long span of time necessary to obtain funding, rehabilitate the collection system, reduce I&I in the most cost-effective manner, and then follow through with design and construction of a new wastewater treatment plant. Most of the compliance dates for obtaining funding, starting and completing design and construction work occur after this NPDES Permit expires – thus the Order to ensure adherence to the agreed upon schedule.

Rosalia's budgetary constraints combined with the fact that Rosalia switched consulting engineers made it necessary for the town to negotiate a new compliance schedule for I&I reduction and new plant construction. The original sewer & plant improvement schedule was listed in Table 7-6 of the approved Facilities Plan (approved by Ecology November 22, 2002). The detailed Phasing and Schedule comparison is shown in the following chart.

Sewer Improvement Phasing and Schedule Comparison

Phase	Description	Schedule – Approved Facility Plan (Table 7-6)	Requested Schedule – (with dates added) 5/12/03 Letter
I	Collection System Repair and Rehab	<u>Funding:</u> • Apply – Jan. 2003	<u>Funding (Step 4):</u> • Apply – Jan.-Feb., 2004

*FACT SHEET FOR NPDES PERMIT WA-004468-7
ROSALIA WASTEWATER TREATMENT PLANT*

	(Assume Step 4 – Design/Construction Project if <\$1,000,000 total project costs)	<ul style="list-style-type: none"> • Receive – Oct. 2003 <u>Design:</u> <ul style="list-style-type: none"> • Begin - Oct. 2003 <u>Construction:</u> <ul style="list-style-type: none"> • Begin – June 2004 • Finish – Nov. 2004 	<ul style="list-style-type: none"> • Receive – Oct. 2004 <u>Design:</u> <ul style="list-style-type: none"> • Begin – late 2004 • End – April 2005 <u>Construction:</u> <ul style="list-style-type: none"> • Begin – May 2005 • Finish – Dec. 2006
	Monitor Lagoon Influent Flow	Dec. 2004 to Dec. 2005	
II	Treatment Plant Upgrades	<u>Funding (Design):</u> <ul style="list-style-type: none"> • Apply – Feb. 2003 • Receive – Oct. 2003 <u>Design (Plans & Specs):</u> <ul style="list-style-type: none"> • Begin – Nov. 2003 • End – Aug. 31, 2004 <p>-----</p> <p>----</p> <u>Funding (construction):</u> <ul style="list-style-type: none"> • Apply – Jan. 2005 • Receive – Oct. 2005 <u>Construction:</u> <ul style="list-style-type: none"> • Begin – May 2006 • End – Oct. 2006 <u>Operational:</u> <ul style="list-style-type: none"> • Start – Nov. 2006 	<u>Funding (Design):</u> <ul style="list-style-type: none"> • Apply – Dec. 2006 • Receive – July 2007 <u>Design (Plans & Specs):</u> <ul style="list-style-type: none"> • Begin – July 2007 • End – Dec. 31, 2007 <p>-----</p> <p>-----</p> <u>Funding (construction):</u> <ul style="list-style-type: none"> • Apply – late 2007 • Receive – Aug. 2008 <u>Construction:</u> <ul style="list-style-type: none"> • Begin – Dec. 2008 • End – June 2009 <u>Operational:</u> <ul style="list-style-type: none"> • Start – July 2009

The Order that will accompany the permit contains a compliance schedule as follows:

1. The Town of Rosalia shall make a continuing effort to acquire the needed funding for the design and completion of repairs to the collection system and design and construction of upgrades to the treatment plant to achieve compliance with water quality standards.
2. Construction of the town collection system Inflow and Infiltration (I&I) repair and rehabilitation will be finished no later than December 2006.
3. Rosalia shall submit to Ecology for review and approval any modifications to the approved Facility Plan (approved November 22, 2002) for the required facility upgrade as soon as possible, but no later than December 31, 2008.
4. Construction of the wastewater treatment plant upgrade or other improvements shall be completed as soon as possible, but no later than December 31, 2009. The updated O&M manual shall be submitted no later than three months after completion.
5. Compliance with permitted effluent limits shall be attained as soon as possible, but no later than February 28, 2010.

GENERAL CONDITIONS

General Conditions are based directly on state and federal law and regulations and have been standardized for all individual municipal NPDES permits issued by the Department.

Condition G1 requires responsible officials or their designated representatives to sign submittals to the Department. Condition G2 requires the Permittee to allow the Department to access the treatment system, production facility, and records related to the permit. Condition G3 specifies conditions for modifying, suspending or terminating the permit. Condition G4 requires the Permittee to apply to the Department prior to increasing or varying the discharge from the levels stated in the permit application. Condition G5 requires the Permittee to construct, modify, and operate the permitted facility in accordance with approved engineering documents. Condition G6 prohibits the Permittee from using the permit as a basis for violating any laws, statutes or regulations. Conditions G7 relates to permit renewal. Condition G8 prohibits the reintroduction of removed substances back into the effluent. Condition G9 states that the Department will modify or revoke and reissue the permit to conform to more stringent toxic effluent standards or prohibitions. Condition G10 incorporates by reference all other requirements of 40 CFR 122.41 and 122.42. Condition G11 notifies the Permittee that additional monitoring requirements may be established by the Department. Condition G12 requires the payment of permit fees. Condition G13 describes the penalties for violating permit conditions.

PERMIT ISSUANCE PROCEDURES

PERMIT MODIFICATIONS

The Department may modify this permit to impose numerical limitations, if necessary to meet Water Quality Standards, Sediment Quality Standards, or Ground Water Standards, based on new information obtained from sources such as inspections, effluent monitoring, outfall studies, and effluent mixing studies.

The Department may also modify this permit as a result of new or amended state or federal regulations.

RECOMMENDATION FOR PERMIT ISSUANCE

This proposed permit meets all statutory requirements for authorizing a wastewater discharge, including those limitations and conditions believed necessary to control toxics, and to protect human health and the beneficial uses of waters of the State of Washington. The Department proposes that the permit be issued with an expiration date of June 30, 2006. This results in less than a five-year permit.

FACT SHEET FOR NPDES PERMIT WA-004468-7
ROSALIA WASTEWATER TREATMENT PLANT

The reason that this permit will not be issued for the standard five-year period is the Department's initiative to issue and manage permits by watershed. This permit is included in the Department's upper-Snake watershed, which is due for all permits to be issued in FY2001. Issuing this permit with a June 30, 2006 expiration date will put it into the proper watershed sequence.

REFERENCES FOR TEXT AND APPENDICES

Environmental Protection Agency (EPA)

1992. National Toxics Rule. Federal Register, V. 57, No. 246, Tuesday, December 22, 1992.
1991. Technical Support Document for Water Quality-based Toxics Control. EPA/505/2-90-001.
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1985. Water Quality Assessment: A Screening Procedure for Toxic and Conventional Pollutants in Surface and Ground Water. EPA/600/6-85/002a.
1983. Water Quality Standards Handbook. USEPA Office of Water, Washington, D.C.

Metcalf and Eddy.

1991. Wastewater Engineering, Treatment, Disposal, and Reuse. Third Edition.

Thompson and Westin.

1961. Engineering Report on Sewage Treatment Facilities, Rosalia, Washington.

Tsivoglou, E.C., and J.R. Wallace.

1972. Characterization of Stream Reaeration Capacity. EPA-R3-72-012. (Cited in EPA 1985 op.cit.)

Varela & Associates

2000. Town of Rosalia, Wastewater Facilities and General Sewer Plan (Draft).

Washington State Department of Ecology.

1994. Permit Writer's Manual. Publication Number 92-109

Water Pollution Control Federation.

1976. Chlorination of Wastewater.

Wright, R.M., and A.J. McDonnell.

1979. In-stream Deoxygenation Rate Prediction. Journal Environmental Engineering Division, ASCE. 105(E2). (Cited in EPA 1985 op.cit.)

APPENDIX A--PUBLIC INVOLVEMENT INFORMATION

The Department has tentatively determined to reissue a permit to the applicant listed on page 1 of this fact sheet. The permit contains conditions and effluent limitations which are described in the rest of this fact sheet.

The Department will publish a Public Notice of Draft (PNOD) on February 20, 2003, in the Whitman County Gazette to inform the public that a draft permit and fact sheet are available for review. Interested persons are invited to submit written comments regarding the draft permit. The draft permit, fact sheet, and related documents are available for inspection and copying between the hours of 8:00 a.m. and 5:00 p.m. weekdays, by appointment, at the regional office listed below. Written comments should be mailed to:

Water Quality Permit Coordinator
Department of Ecology
Eastern Regional Office,
4601 North Monroe,
Spokane, Washington 99205-1295

Any interested party may comment on the draft permit or request a public hearing on this draft permit within the thirty (30) day comment period to the address above. The request for a hearing shall indicate the interest of the party and the reasons why the hearing is warranted. The Department will hold a hearing if it determines there is a significant public interest in the draft permit (WAC 173-220-090). Public notice regarding any hearing will be circulated at least thirty (30) days in advance of the hearing. People expressing an interest in this permit will be mailed an individual notice of hearing (WAC 173-220-100).

Comments should reference specific text followed by proposed modification or concern when possible. Comments may address technical issues, accuracy and completeness of information, the scope of the facility's proposed coverage, adequacy of environmental protection, permit conditions, or any other concern that would result from issuance of this permit.

The Department will consider all comments received within thirty (30) days from the date of public notice of draft indicated above, in formulating a final determination to issue, revise, or deny the permit. The Department's response to all significant comments is available upon request and will be mailed directly to people expressing an interest in this permit.

Further information may be obtained from the Department by telephone, (509) 329-3567, or by writing to the address listed above.

This permit and fact sheet were written by Andrew K. S. Tom and Patrick McGuire.

APPENDIX B--GLOSSARY

Acute Toxicity--The lethal effect of a pollutant on an organism that occurs within a short period of time, usually 48 to 96 hours.

AKART-- An acronym for “all known, available, and reasonable methods of prevention, control, and treatment”.

Ambient Water Quality--The existing environmental condition of the water in a receiving water body.

Ammonia--Ammonia is produced by the breakdown of nitrogenous materials in wastewater. Ammonia is toxic to aquatic organisms, exerts an oxygen demand, and contributes to eutrophication. It also increases the amount of chlorine needed to disinfect wastewater.

Average Monthly Discharge Limitation --The highest allowable average of daily discharges over a calendar month, calculated as the sum of all daily discharges measured during a calendar month divided by the number of daily discharges measured during that month (except in the case of fecal coliform). The daily discharge is calculated as the average measurement of the pollutant over the day.

Average Weekly Discharge Limitation -- The highest allowable average of daily discharges over a calendar week, calculated as the sum of all daily discharges measured during a calendar week divided by the number of daily discharges measured during that week. The daily discharge is calculated as the average measurement of the pollutant over the day.

Best Management Practices (BMPs)--Schedules of activities, prohibitions of practices, maintenance procedures, and other physical, structural and/or managerial practices to prevent or reduce the pollution of waters of the State. BMPs include treatment systems, operating procedures, and practices to control: plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage. BMPs may be further categorized as operational, source control, erosion and sediment control, and treatment BMPs.

BOD₅--Determining the Biochemical Oxygen Demand of an effluent is an indirect way of measuring the quantity of organic material present in an effluent that is utilized by bacteria. The BOD₅ is used in modeling to measure the reduction of dissolved oxygen in a receiving water after effluent is discharged. Stress caused by reduced dissolved oxygen levels makes organisms less competitive and less able to sustain their species in the aquatic environment. Although BOD is not a specific compound, it is defined as a conventional pollutant under the federal Clean Water Act.

Bypass--The intentional diversion of waste streams from any portion of a treatment facility.

Chlorine--Chlorine is used to disinfect wastewaters of pathogens harmful to human health. It is also extremely toxic to aquatic life.

Chronic Toxicity--The effect of a pollutant on an organism over a relatively long time, often 1/10 of an organism's lifespan or more. Chronic toxicity can measure survival, reproduction or growth rates, or other parameters to measure the toxic effects of a compound or combination of compounds.

*FACT SHEET FOR NPDES PERMIT WA-004468-7
ROSALIA WASTEWATER TREATMENT PLANT*

Clean Water Act (CWA)--The Federal Water Pollution Control Act enacted by Public Law 92-500, as amended by Public Laws 95-217, 95-576, 96-483, 97-117; USC 1251 et seq.

Combined Sewer Overflow (CSO)--The event during which excess combined sewage flow caused by inflow is discharged from a combined sewer, rather than conveyed to the sewage treatment plant because either the capacity of the treatment plant or the combined sewer is exceeded.

Compliance Inspection - Without Sampling--A site visit for the purpose of determining the compliance of a facility with the terms and conditions of its permit or with applicable statutes and regulations.

Compliance Inspection - With Sampling--A site visit to accomplish the purpose of a Compliance Inspection - Without Sampling and as a minimum, sampling and analysis for all parameters with limits in the permit to ascertain compliance with those limits; and, for municipal facilities, sampling of influent to ascertain compliance with the percent removal requirement. Additional sampling may be conducted.

Composite Sample--A mixture of grab samples collected at the same sampling point at different times, formed either by continuous sampling or by mixing a minimum of four discrete samples. May be "time-composite"(collected at constant time intervals) or "flow-proportional" (collected either as a constant sample volume at time intervals proportional to stream flow, or collected by increasing the volume of each aliquot as the flow increased while maintaining a constant time interval between the aliquots.

Construction Activity--Clearing, grading, excavation and any other activity which disturbs the surface of the land. Such activities may include road building, construction of residential houses, office buildings, or industrial buildings, and demolition activity.

Continuous Monitoring --Uninterrupted, unless otherwise noted in the permit.

Critical Condition--The time during which the combination of receiving water and waste discharge conditions have the highest potential for causing toxicity in the receiving water environment. This situation usually occurs when the flow within a water body is low, thus, its ability to dilute effluent is reduced.

Dilution Factor--A measure of the amount of mixing of effluent and receiving water that occurs at the boundary of the mixing zone. Expressed as the inverse of the effluent fraction e.g., a dilution factor of 10 means the effluent comprises 10% by volume and the receiving water 90%.

Engineering Report--A document which thoroughly examines the engineering and administrative aspects of a particular domestic or industrial wastewater facility. The report shall contain the appropriate information required in WAC 173-240-060 or 173-240-130.

Fecal Coliform Bacteria--Fecal coliform bacteria are used as indicators of pathogenic bacteria in the effluent that are harmful to humans. Pathogenic bacteria in wastewater discharges are controlled by disinfecting the wastewater. The presence of high numbers of fecal coliform bacteria in a water body can indicate the recent release of untreated wastewater and/or the presence of animal feces.

FACT SHEET FOR NPDES PERMIT WA-004468-7
ROSALIA WASTEWATER TREATMENT PLANT

Grab Sample--A single sample or measurement taken at a specific time or over as short period of time as is feasible.

Industrial User-- A discharger of wastewater to the sanitary sewer which is not sanitary wastewater or is not equivalent to sanitary wastewater in character.

Industrial Wastewater--Water or liquid-carried waste from industrial or commercial processes, as distinct from domestic wastewater. These wastes may result from any process or activity of industry, manufacture, trade or business, from the development of any natural resource, or from animal operations such as feed lots, poultry houses, or dairies. The term includes contaminated storm water and, also, leachate from solid waste facilities.

Infiltration and Inflow (I/I)--"Infiltration" means the addition of ground water into a sewer through joints, the sewer pipe material, cracks, and other defects. "Inflow" means the addition of precipitation-caused drainage from roof drains, yard drains, basement drains, street catch basins, etc., into a sewer.

Interference -- A discharge which, alone or in conjunction with a discharge or discharges from other sources, both:

Inhibits or disrupts the POTW, its treatment processes or operations, or its sludge processes, use or disposal and;

Therefore is a cause of a violation of any requirement of the POTW's NPDES permit (including an increase in the magnitude or duration of a violation) or of the prevention of sewage sludge use or disposal in compliance with the following statutory provisions and regulations or permits issued thereunder (or more stringent State or local regulations): Section 405 of the Clean Water Act, the Solid Waste Disposal Act (SWDA) (including title II, more commonly referred to as the Resource Conservation and Recovery Act (RCRA), and including State regulations contained in any State sludge management plan prepared pursuant to subtitle D of the SWDA), sludge regulations appearing in 40 CFR Part 507, the Clean Air Act, the Toxic Substances Control Act, and the Marine Protection, Research and Sanctuaries Act.

Major Facility--A facility discharging to surface water with an EPA rating score of > 80 points based on such factors as flow volume, toxic pollutant potential, and public health impact.

Maximum Daily Discharge Limitation--The highest allowable daily discharge of a pollutant measured during a calendar day or any 24-hour period that reasonably represents the calendar day for purposes of sampling. The daily discharge is calculated as the average measurement of the pollutant over the day.

Method Detection Level (MDL)--The minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is above zero and is determined from analysis of a sample in a given matrix containing the analyte.

Minor Facility--A facility discharging to surface water with an EPA rating score of < 80 points based on such factors as flow volume, toxic pollutant potential, and public health impact.

Mixing Zone--A volume that surrounds an effluent discharge within which water quality criteria may be exceeded. The area of the authorized mixing zone is specified in a facility's permit and follows procedures outlined in State regulations (Chapter 173-201A WAC).

FACT SHEET FOR NPDES PERMIT WA-004468-7
ROSALIA WASTEWATER TREATMENT PLANT

National Pollutant Discharge Elimination System (NPDES)--The NPDES (Section 402 of the Clean Water Act) is the Federal wastewater permitting system for discharges to navigable waters of the United States. Many states, including the State of Washington, have been delegated the authority to issue these permits. NPDES permits issued by Washington State permit writers are joint NPDES/State permits issued under both State and Federal laws.

Pass through -- A discharge which exits the POTW into waters of the State in quantities or concentrations which, alone or in conjunction with a discharge or discharges from other sources, is a cause of a violation of any requirement of the POTW's NPDES permit (including an increase in the magnitude or duration of a violation), or which is a cause of a violation of State water quality standards.

pH--The pH of a liquid measures its acidity or alkalinity. A pH of 7 is defined as neutral, and large variations above or below this value are considered harmful to most aquatic life.

Potential Significant Industrial User--A potential significant industrial user is defined as an Industrial User which does not meet the criteria for a Significant Industrial User, but which discharges wastewater meeting one or more of the following criteria:

- a. Exceeds 0.5 % of treatment plant design capacity criteria and discharges <25,000 gallons per day or;
- b. Is a member of a group of similar industrial users which, taken together, have the potential to cause pass through or interference at the POTW (e.g. facilities which develop photographic film or paper, and car washes).

The Department may determine that a discharger initially classified as a potential significant industrial user should be managed as a significant industrial user.

Quantitation Level (QL)-- A calculated value five times the MDL (method detection level).

Significant Industrial User (SIU)--

- 1) All industrial users subject to Categorical Pretreatment Standards under 40 CFR 403.6 and 40 CFR Chapter I, Subchapter N and;
- 2) Any other industrial user that: discharges an average of 25,000 gallons per day or more of process wastewater to the POTW (excluding sanitary, noncontact cooling, and boiler blow-down wastewater); contributes a process wastestream that makes up 5 percent or more of the average dry weather hydraulic or organic capacity of the POTW treatment plant; or is designated as such by the Control Authority* on the basis that the industrial user has a reasonable potential for adversely affecting the POTW's operation or for violating any pretreatment standard or requirement (in accordance with 40 CFR 403.8(f)(6)).

Upon finding that the industrial user meeting the criteria in paragraph 2, above, has no reasonable potential for adversely affecting the POTW's operation or for violating any pretreatment standard or requirement, the Control Authority* may at any time, on its own initiative or in response to a petition received from an industrial user or POTW, and in accordance with 40 CFR 403.8(f)(6), determine that such industrial user is not a significant industrial user.

*The term "Control Authority" refers to the Washington State Department of Ecology in the case of non-delegated POTWs or to the POTW in the case of delegated POTWs.

FACT SHEET FOR NPDES PERMIT WA-004468-7
ROSALIA WASTEWATER TREATMENT PLANT

State Waters--Lakes, rivers, ponds, streams, inland waters, underground waters, salt waters, wetlands, and all other surface waters and watercourses within the jurisdiction of the state of Washington.

Stormwater--That portion of precipitation that does not naturally percolate into the ground or evaporate, but flows via overland flow, interflow, pipes, and other features of a storm water drainage system into a defined surface water body, or a constructed infiltration facility.

Technology-based Effluent Limit--A permit limit that is based on the ability of a treatment method to reduce the pollutant.

Total Suspended Solids (TSS)--Total suspended solids are the particulate materials in an effluent. Large quantities of TSS discharged to a receiving water may result in solids accumulation. Apart from any toxic effects attributable to substances leached out by water, suspended solids may kill fish, shellfish, and other aquatic organisms by causing abrasive injuries and by clogging the gills and respiratory passages of various aquatic fauna. Indirectly, suspended solids can screen out light and can promote and maintain the development of noxious conditions through oxygen depletion.

Upset--An exceptional incident in which there is unintentional and temporary noncompliance with technology-based permit effluent limitations because of factors beyond the reasonable control of the Permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, lack of preventative maintenance, or careless or improper operation.

Water Quality-based Effluent Limit--A limit on the concentration or mass of an effluent parameter that is intended to prevent the concentration of that parameter from exceeding its water quality criterion after it is discharged into a receiving water.

APPENDIX C--TECHNICAL CALCULATIONS

Several of the Excel® spreadsheet tools used to evaluate a discharger's ability to meet Washington State water quality standards can be found on the Department's homepage at <http://www.ecy.wa.gov>.

APPENDIX D--RESPONSE TO COMMENTS

Comments were received from the Town of Rosalia in a letter dated May 17, 2003. For the full text of the letter, please see Attachment 1.

Comment 1:

“Facility Plan. The Town needs to obtain funding for the facility planning process, which it anticipates to acquire by December 2003. In addition, due to questions about the actual flow in the treatment plant, the flows be verified in Spring 2004. The Town is also in the process of incrementally raising rates so that they can start saving money for matching funds to pay for the study and subsequent construction. As a result, we request that the completion date of the Facility Plan be moved to July 2004.”

Response 1:

The Rosalia Facility Plan for the treatment plant upgrade was approved November 22, 2002. The NPDES Permit circulated for Public Review listed August 31, 2004 as a “Submittal Date” for the modification of the Facility Plan.

Because the Town of Rosalia changed consulting engineers and did not apply for funding at the beginning of 2003, Ecology agrees that the submittal date for Facility Plan modifications for the plant upgrade needs to be changed. The new facility plan modification deadline or required submittal date will be December 31, 2007. This new date will allow for completion of the I & I work and follow up assessment of new influent flows. The December 31, 2007 date will be included in the accompanying Order.

Comment 2:

“Inflow and Infiltration Reduction. The Town is currently attempting to replace or rehabilitate 1,000 linear feet of collection system per year. This will allow us to reduce the total flow in to the treatment plant substantially so we can build a smaller more affordable treatment plant. However, the Town does not have adequate funds to do this all in one big chunk. As a result, the Town is going to apply for a Community Development Block Grant for an I/I rehabilitation project at the same time that we are replacing sections of Town. Because of the funding requirements and time frames, the the earliest that this would be complete would be December 2006.”

Response 2

The timetable proposed by the Town the completion of I/I replacement and rehabilitation work is acceptable. The December 2006 date will be included in the accompanying Order.

Comment 3:

“Following completion of the I/I phase, the Town will then need to obtain funding for design of the treatment plant upgrades. This process takes anywhere from six to twelve months. That would allow funding to be obtained by July 2007. This design can then be complete by December 31, 2007.”

FACT SHEET FOR NPDES PERMIT WA-004468-7
ROSALIA WASTEWATER TREATMENT PLANT

“Once the design is complete, the Town would likely go after construction funding. This process will likely take six to twelve months. If the application is on time, there is a good chance that the Town can get that funding required by August 2008.”

“Following acquisition of construction funding, construction would then be begun by December 31, 2008.”

Response 3:

This schedule will be included in the accompanying Order.

Comment 4:

“Interim Effluent Limitations”

“The interim effluent limitations need to be modified as follows. The verbiage explaining the timeframe on the interim effluent limitations need to match the preceding schedule. They need to be effective until the new plant is operational. The reference to a specific date should be eliminated.”

Response 4:

Because the new schedule for completion is beyond the effective dates for this permit, the specific date was removed and the wording has been changed to read, “Effective until the new plant is operational”.

Comment 5:

“In the interim effluent limitations, the pH should be limited to a minimum of 6 and a maximum of 9 pH units. During the summer algae blooms, the pH will climb and drop depending on the time of day.”

“A maximum daily temperature should be modified for this facility. During the summer, the 16°C is unobtainable since the raw wastewater temperatures can exceed this value.”

Response 5:

The interim limits for all parameters will remain. The pH requirements are set for a Class AA stream [WAC 173-201-030(1)(a)] so the pH limits will remain 6.5 to 8.5. The interim limits for the Rosalia facility are for the discharge period during the winter months, January through March. The Rosalia wastewater treatment plant has historically met the Class AA effluent temperature limits during the discharge months of January, February and March.

Comment 6:

“Again the timeframe for the final effluent limitations should eliminate a reference to a date and just reference compliance schedule.”

Response 6:

The wording has been changed to read, “Effective when the new plant is operational”.

Comment 7:

*FACT SHEET FOR NPDES PERMIT WA-004468-7
ROSALIA WASTEWATER TREATMENT PLANT*

“Final Effluent Limitations.”

“The BOD₅ and Total suspended solids in this permit have been reduced from average weekly of 65 mg/L and average monthly of 45 mg/L to an average weekly of 45 mg/L and the average monthly of 30 mg/L. These tighter permit limitations preclude the use of lagoon treatment. Periodic high suspended solids events are inevitable during spring/fall turnover and algae blooms. To minimize operation and maintenance concerns, lagoon treatment ought to be retained as a viable alternative. Retaining the permit levels at 65/45 allows the Town to retian the lagoons and provide more consistent, reliable treatment.”

“Fecal Coliform Bacteria limits have been reduced from 400 counts per ml average weekly and 200 average monthly to 100 average weekly and 50 average monthly. This lower level is more difficult for the Town to meet and with more restrictive chlorine dosages forces the Town into a different type of disinfection or chlorination and dechlorination. Since the stream section is not listed for coliform bacteria, it does not appear that this increased permit condition is warranted.”

“Temperature as noted above. This temperature criterion is not achievable as stated and should be modified.”

“Ammonia is added to this permit, however ammonia is not listed in the State of Washington 303d listing. As a result there does not appear to be any justification for its inclusion in this permit. The inability of the Town to meet the temperature criterion will require the Town to do a use attainability analysis.”

Response 7:

The final effluent limitations are determined by the receiving water class or its uses, as defined in the regulation, WAC 173-201A. The final limits will remain unless the regulation is modified.